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CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

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SECRET [redacted]

COUNTRY	East Germany	REPORT NO.	[redacted] 25X1
SUBJECT	Miscellaneous Information from Funkwerk Koepenick	DATE DISTR.	29 January 1954
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PLACE ACQUIRED	[redacted]	REFERENCES	[redacted]

[redacted]

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1. Radar

a. Anti-collision apparatus (Kollisionsschutzgeraet)

(1) The apparatus is not yet ready. Work is still held up by lack of klystrons and magnetrons.

(2) A pilot series of about 10 will be made in Funkwerk Koepenick. It is not known where series production will take place.

b. Further work

25X1 [redacted]

25X1 [redacted] the Russians were very interested in a smaller set. The Russians have not appeared in the laboratory since their original requests for a smaller, lighter set.

25X1 [redacted] the next set (if it really is to be designed) will be for airborne use; this assumption seems to be based only on the fact that the set would have to be much smaller and lighter.

2. Radio beacon near Sassnitz on Ruegen ("Funkfeuer")

25X1 The transmitter has been installed [redacted] It is fully ready to radiate. Because of a lack of funds, however, the aerial masts have not yet been built, or at least not completed (it is not certain which). The apparatus is thus not yet on the air.

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SECRET [redacted]

STATE	x	ARMY	x	NAVY	x	AIR	x	FBI		AEC		OSI Ev	x	ORR Ev	x

(Note: Washington Distribution Indicated By "X"; Field Distribution By "#".)

3. [redacted]

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4. KN-3 transmitter

25X1 A KN-3 apparatus, with 5 KW power stage built by Funkwerk Koepenick (3-24 mcs) was to be supplied to the "SOVETSKI SOYUZ" [redacted] The ship has also on board:

2 x 800 W transmitters: short and intermediate (Grenz-) wave

4 x 100 W " " " " " "

2 x 100 W transmitter: long wave

2 x 70 W emergency transmitter (500 KW).

5. [redacted]

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6. "Michael" apparatus

The Funkwerk Koepenick is to convert an unspecified number of "Michael" apparatuses delivered to the VP for teleprinter traffic. The Berlin-Cottbus section will be

25X1 installed first. [redacted]

7. Miscellaneous information

25X1 a. No more repatriates from the USSR are known to have been taken on by the Funkwerk [redacted]

25X1 b. No new development tasks are known to have come in [redacted]

8. Radio direction beacon (Funkleitfeuer).

A description of the operation of this apparatus was published in the Leipzig Fair edition of the Berliner Zeitung. A translation is attached as an appendix.

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[redacted]

APPENDIX

Method of operation of "Funkleitfeuer"

(Article in the East German newspaper "Berliner Zeitung", Leipzig Autumn Fair editicn)

Radio direction beacon (Funkleitfeuer) for the first time before the public

"Funkleitfeuer" makes it possible for ships to reach harbor safely and to leave again, during fog and bad visibility, without a pilot.

It is especially important in deep-sea fishing, when it is a question of landing the catch quickly and going out again regardless of the weather. Apart from a wireless receiver, which can be found in even small ships, it is not necessary to have any special apparatus to receive these signals.

The beacons operate on the long-wave band(about 300 kcs) in the A2-band on the following principle:

The transmitter is built, with its aerial equipment, on the coast so that it is in a straight line with the entry to the harbor. It is controlled by an automatic key device and repeats continually the following sequence: The transmitter first sends its identification signal and then a continuous note. The horizontal radiation diagram is now a circle. During the time when the continuous note is being transmitted, a double-circle characteristic with 90° phase-distortion is also transmitted. Through interference of the two radiation diagrams, circle and double circle, a cardioid results.

In the rhythm of complementary morse-signals, "e" (dot) and "t" (dash) or "a" (dot - dash) and "n" (dash - dot), the double circle characteristic is transmitted first with the 90° phase position advanced, and then retarded 90°. This produces a reversal (Umklappen) in the resultant cardioid radiation characteristic. The line of symmetry of this reversal is the recognized beam for the entry of the harbor. If the ship goes off the beam, the continuous buzz is accompanied by morse-signals "e" or "t", or alternatively "a" or "n", according to the direction of the deviation. The ship can then correct its course until the single continuous buzz of the guide-beam is received - that is, until the ship is once more on the correct course for entry into the harbor.

The radio direction beacon was developed by Funkwerk Koepenick and will be demonstrated for the first time at the Leipzig Fair, 1953.